STIC Search Report
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STIC Database Tracking Number: 142159

TO: Shailendra Kumar **Location: 5c03 / 5c18** **Tuesday, January 11, 2005** **Art Unit: 1621** **Phone: 272-0640** **Serial Number: 10 / 735125**	**From: Jan Delaval** **Location: Biotech-Chem Library** **Rem 1a51** **Phone: 272-2504** **jan.delaval@uspto.gov**

Search Notes

Jan Please

Access DB# _____

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: S. Kumar Examiner #: 69594 Date: 1/10/05

Art Unit: 1621 Phone Number 2-0640 Serial Number: 10/735125

Mail Box and Bldg/Room Location: REM 5C03 5C18 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

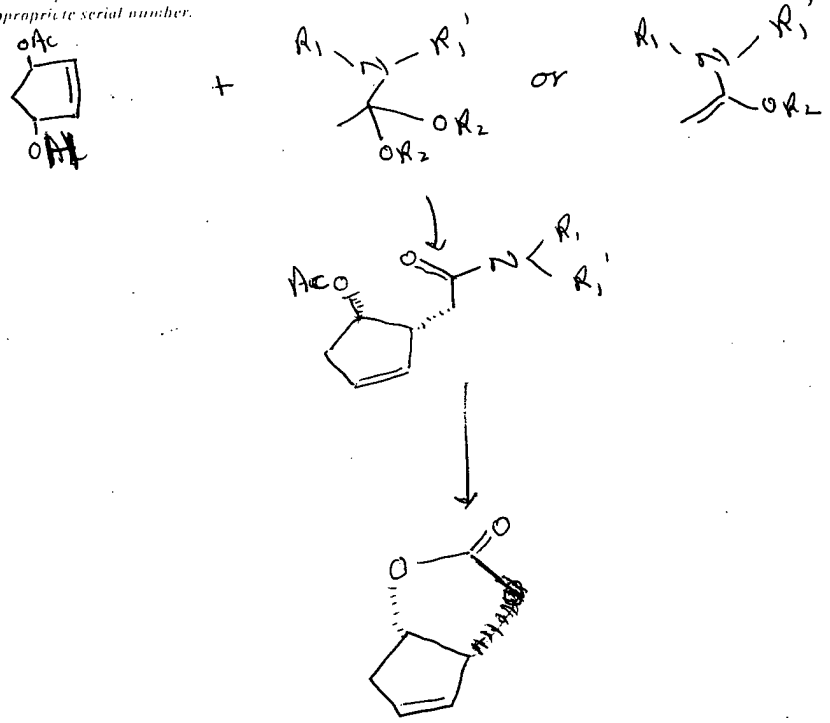
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc. if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of invention: Process for the synthesis of 3,3aβ-6-6aβ-tetrahydro-2H-cyclopenta[b] furan-2-one

Inventors (please provide full names): Kevin Edward Henegar et al.

Earliest Priority Filing Date: 12/23/02

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.



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STAFF USE ONLY	Type of Search	Vendors and cost where applicable
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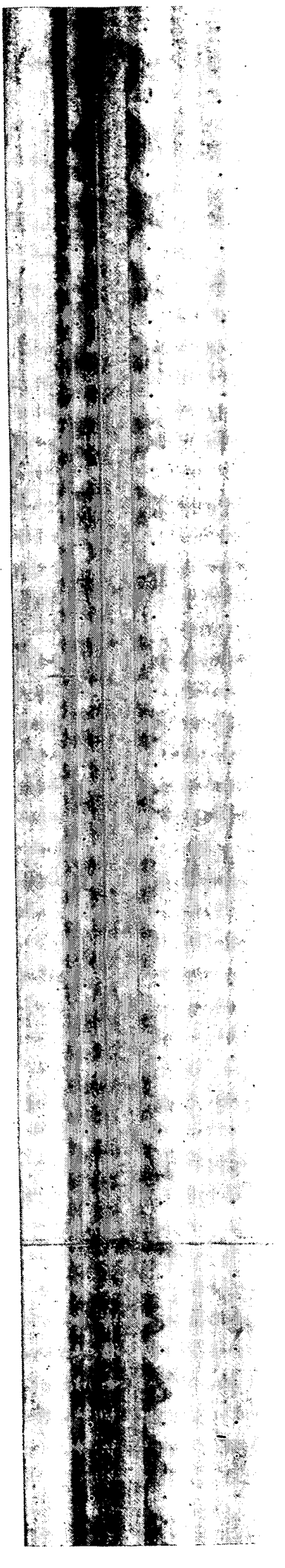
Searcher Phone #: 22504	AA Sequence (#)	Dialog
Searcher Location:	Structure (#) ✓	Questel/Orbit
Date Searcher Picked Up: 1/11/05	Bibliographic	Dr.Link
Date Completed: 1/11/05	Litigation	Lexis/Nexis
Searcher Prep & Review Time:	Fulltext	Sequence Systems
Clerical Prep Time: 20	Patent Family	WWW/Internet
Online Time: T 25	Other	Other (specify) (STIC)

PTO-1590 (8-01)

JAN 10 2005



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USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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Property values tagged with IC are from the ZIC/VINITI data file
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STRUCTURE FILE UPDATES:    9 JAN 2005  HIGHEST RN 810659-29-1
DICTIONARY FILE UPDATES:   9 JAN 2005  HIGHEST RN 810659-29-1

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

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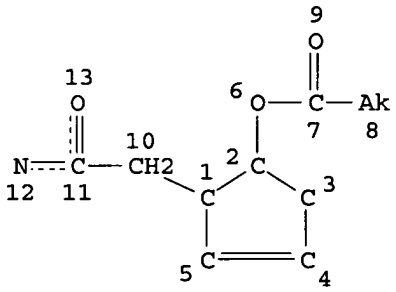


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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS  13

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L21           11 SEA FILE=REGISTRY ABB=ON  PLU=ON  L20 NOT (CL OR F)/ELS


=> d sta que l35
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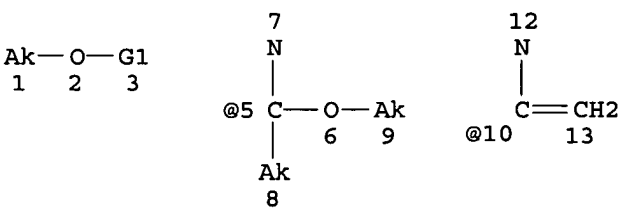

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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS  11

STEREO ATTRIBUTES: NONE
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100.0% PROCESSED   3899 ITERATIONS                          266 ANSWERS
SEARCH TIME: 00.00.01


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               E HENEGAR K/AU
L2            25 S E4,E6-E8
               E CEBULA M/AU
L3             1 S E4
               SEL RN L1

     FILE 'REGISTRY' ENTERED AT 12:55:03 ON 11 JAN 2005
L4             4 S E1-E4
L5             1 S L4 AND C7H10O3
L6             1 S L4 AND C7H8O2
               E C7H10O3/MF
L7           127 S E3 AND C5/ES AND 1/NR
L8            34 S L7 AND ?ACET?/CNS
L9            12 S L8 AND DIOL
L10            7 S L9 AND 1 3
L11            7 S L5,L10
               E C7H8O2/MF
L12           27 S E3 AND OC4-C5/ES AND 2/NR
L13            7 S L12 AND 180.50.3/RID
L14            6 S L13 NOT 6H
L15            6 S L6,L14
L16              STR
L17            0 S L16
L18              STR L16
L19            1 S L18
L20           13 S L18 FUL
               SAV L20 KUMAR735/A
L21           11 S L20 NOT (CL OR F)/ELS

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L24            0 S L15

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L27          207 S L15
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L29            9 S L25 AND L27
L30            1 S L28 AND L29
L31            1 S L28,L30
L32            4 S L26 NOT L31

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L35          266 S L33 FUL
                 SAV L35 KUMAR735A/A

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L36          673 S L35
L37            1 S L36 AND L26
L38            2 S L25 AND L36
L39            1 S L38 AND L26,L27
L40            1 S L31,L37,L39
L41            5 S L36 AND L27
L42            8 S L32,L41 NOT L40
L43            2 S L25-L27,L36 AND L1-L3
L44            3 S L25-L27,L36 AND (PHARMACIA? OR UPJOHN?)/PA,CS
L45            2 S L44 NOT PYRROLES/TI
L46           10 S L40,L42,L45

     FILE 'REGISTRY' ENTERED AT 13:10:48 ON 11 JAN 2005

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 13:11:07 ON 11 JAN 2005
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FILE COVERS 1907 - 11 Jan 2005  VOL 142 ISS 3
FILE LAST UPDATED: 10 Jan 2005  (20050110/ED)

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.


=> d l46 all hitstr tot

L46  ANSWER 1 OF 10  HCAPLUS  COPYRIGHT 2005 ACS on STN
AN   2004:606559  HCAPLUS
DN   141:122416
ED   Entered STN:  29 Jul 2004
TI   Process for preparing enantiomerically enriched (1S,4R)
     1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification
IN   Henegar, Kevin Edward
PA   Pharmacia & Upjohn Company, USA
SO   PCT Int. Appl., 15 pp.
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CODEN: PIXXD2
DT Patent
LA English
IC ICM C12P007-62
ICS C12N009-94
CC 16-2 (Fermentation and Bioindustrial Chemistry)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004063384	A1	20040729	WO 2004-IB45	20040105
W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GH, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ				
US 2004171129	A1	20040902	US 2004-753136	20040107
PRAI US 2003-439953P	P	20030114		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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	ICS	C12N009-94

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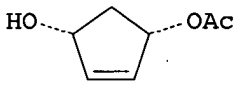


I

AB This invention relates to a process for the synthesis of enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene of Formula (I), a compound useful as an intermediate in the synthesis of prostaglandins and prostanoids.

ST enzymic transesterification cyclopentenediol
IT Charcoal
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(activated; process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)
IT Resolution (separation)
(enzymic, kinetic; process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)
IT Transesterification
(enzymic, stereoselective; process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)
IT Pressure
(low, 20-60 mm.; process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)
IT Solvents
(organic; process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)
IT Crystallization
Filtration
Precipitation (chemical)
Temperature effects, biological
(process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)
IT Diatomite

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)

IT 109-99-9, Tetrahydrofuran, processes 121-44-8, Triethylamine, processes 7732-18-5, Water, processes
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)

IT 8049-47-6, Pancreatin
RL: BCP (Biochemical process); CAT (Catalyst use); BIOL (Biological study); PROC (Process); USES (Uses)
(process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)

IT 108-05-4, Vinyl acetate, reactions 29783-26-4
RL: BCP (Biochemical process); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)

IT **60176-77-4P**
RL: BMF (Bioindustrial manufacture); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)

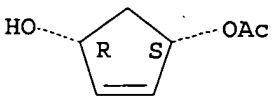
IT 54664-61-8P, cis-1,4-Diacetoxycyclopent-2-ene **60410-16-4P**
RL: BYP (Byproduct); PREP (Preparation)
(process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)

IT 142-82-5, Heptane, processes 1343-88-0, Magnesol 1634-04-4, Methyl tert-butyl ether
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)

IT **60176-77-4P**
RL: BMF (Bioindustrial manufacture); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)

RN 60176-77-4 HCAPLUS
CN 4-Cyclopentene-1,3-diol, monoacetate, (1S,3R)- (9CI) (CA INDEX NAME)

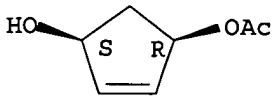
Absolute stereochemistry. Rotation (-).



IT **60410-16-4P**
RL: BYP (Byproduct); PREP (Preparation)
(process for preparing enantiomerically enriched (1S,4R) 1-acetoxy-4-hydroxycyclopent-2-ene by enzymic transesterification)

RN 60410-16-4 HCAPLUS
CN 4-Cyclopentene-1,3-diol, monoacetate, (1R,3S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L46 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:546470 HCAPLUS
DN 141:88963
ED Entered STN: 08 Jul 2004
TI Process for the synthesis of 3,3a,6,6a-tetrahydro-2H-cyclopentan[b]furan-2-one, a useful intermediate for prostaglandin synthesis
IN Henegar, Kevin Edward; Cebula, Mateusz
PA **Pharmacia & Upjohn Company, USA**
SO PCT Int. Appl., 15 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07C235-30
ICS C07D307-93
CC 26-3 (Biomolecules and Their Synthetic Analogs)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004056749	A1	20040708	WO 2003-IB5978	20031210
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
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	US 2004147775	A1	20040729	US 2003-735125	20031212
PRAI	US 2002-435991P	P	20021223		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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	ICS	C07D307-93

OS CASREACT 141:88963; MARPAT 141:88963
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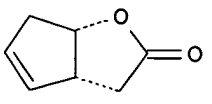

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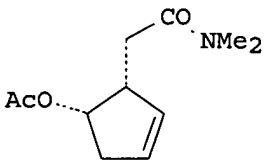
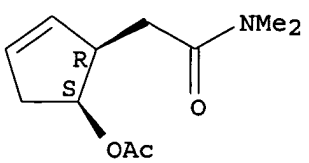


II

AB This present invention related to a process for the synthesis of (1S,5R)-2-oxabicyclo[3.3.0]oct-6-en-3-one (I). Thus, amide II, which was prepared by reacting (3S,5R)-3-acetoxy-5-hydroxycyclopentene with N,N-dimethylacetamide di-Me acetal, was dissolved in MTBE and treated with KOH followed by acidification of the reaction mixture to a pH of 1.0-1.5 using HCl and stirring for 1.0 h to give the desired lactone I.

ST cyclopentanfuranone asym synthesis prostaglandin intermediate
IT Synthons
(chiral; process for the synthesis of 3,3a,6,6a-tetrahydro-2H-cyclopentan[b]furan-2-one, a useful intermediate for prostaglandin synthesis)
IT Asymmetric synthesis and induction
(process for the synthesis of 3,3a,6,6a-tetrahydro-2H-cyclopentan[b]furan-2-one, a useful intermediate for prostaglandin synthesis)
IT Prostaglandins
RL: PNU (Preparation, unclassified); PREP (Preparation)
(process for the synthesis of 3,3a,6,6a-tetrahydro-2H-cyclopentan[b]furan-2-one, a useful intermediate for prostaglandin synthesis)
IT Lactonization
(stereoselective; process for the synthesis of 3,3a,6,6a-tetrahydro-2H-cyclopentan[b]furan-2-one, a useful intermediate for prostaglandin synthesis)
IT **138232-57-2P**
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(process for the synthesis of 3,3a,6,6a-tetrahydro-2H-cyclopentan[b]furan-2-one, a useful intermediate for prostaglandin synthesis)
IT **43119-28-4P**, (1S,5R)-2-Oxabicyclo[3.3.0]oct-6-en-3-one
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(process for the synthesis of 3,3a,6,6a-tetrahydro-2H-cyclopentan[b]furan-2-one, a useful intermediate for prostaglandin synthesis)
IT **18871-66-4**, N,N-Dimethylacetamide dimethyl acetal
60176-77-4, (3S,5R)-3-Acetoxy-5-hydroxycyclopentene
RL: RCT (Reactant); RACT (Reactant or reagent)
(process for the synthesis of 3,3a,6,6a-tetrahydro-2H-cyclopentan[b]furan-2-one, a useful intermediate for prostaglandin synthesis)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; PATENT ABSTRACTS OF JAPAN 1993, V017(413), PC-1092
(2) Chisso Corp; EP 1086942 A 2001 HCAPLUS
(3) Ema, T; JOURNAL OF ORGANIC CHEMISTRY 1996, V61(24), P8610 HCAPLUS
(4) Sumitomo Chem Co Ltd; JP 05086002 A 1993 HCAPLUS
IT **138232-57-2P**
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(process for the synthesis of 3,3a,6,6a-tetrahydro-2H-cyclopentan[b]furan-2-one, a useful intermediate for prostaglandin synthesis)
RN 138232-57-2 HCAPLUS
CN 2-Cyclopentene-1-acetamide, 5-(acetyloxy)-N,N-dimethyl-, (1R,5S)- (9CI) (CA INDEX NAME)

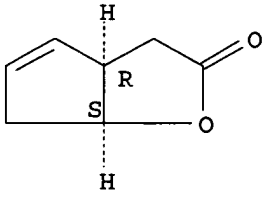
Absolute stereochemistry.



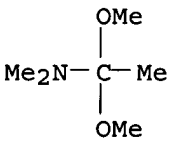
IT **43119-28-4P**, (1S,5R)-2-Oxabicyclo[3.3.0]oct-6-en-3-one

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(process for the synthesis of 3,3a,6,6a-tetrahydro-2H-cyclopentan[b]furan-2-one, a useful intermediate for prostaglandin synthesis)
RN 43119-28-4 HCAPLUS
CN 2H-Cyclopenta[b]furan-2-one, 3,3a,6,6a-tetrahydro-, (3aR,6aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT **18871-66-4**, N,N-Dimethylacetamide dimethyl acetal
60176-77-4, (3S,5R)-3-Acetoxy-5-hydroxycyclopentene
RL: RCT (Reactant); RACT (Reactant or reagent)
(process for the synthesis of 3,3a,6,6a-tetrahydro-2H-cyclopentan[b]furan-2-one, a useful intermediate for prostaglandin synthesis)
RN 18871-66-4 HCAPLUS
CN Ethanamine, 1,1-dimethoxy-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 60176-77-4 HCAPLUS
CN 4-Cyclopentene-1,3-diol, monoacetate, (1S,3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

L46 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:225286 HCAPLUS
DN 134:252197
ED Entered STN: 30 Mar 2001
TI Process for the preparation of optically active alcohols.
IN Ogasawara, Kunio
PA Chisso Corp., Japan
SO Eur. Pat. Appl., 18 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C07C043-196
ICS C07C069-013; C07C067-02; C07B053-00; C07D307-935
CC 26-3 (Biomolecules and Their Synthetic Analogs)

Section cross-reference(s): 9, 24

FAN.CNT 1

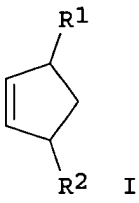
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1086942	A1	20010328	EP 2000-119371	20000911
	EP 1086942	B1	20030423		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001158758	A2	20010612	JP 2000-271610	20000907
PRAI	JP 1999-267573	A	19990921		

CLASS

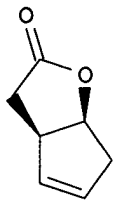
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1086942	ICM	C07C043-196
	ICS	C07C069-013; C07C067-02; C07B053-00; C07D307-935
EP 1086942	ECLA	C07C043/196; C07C069/013; C07D307/93B1

OS CASREACT 134:252197; MARPAT 134:252197

GI



I



II

AB The present invention relates to an optically active alc. and the analog thereof, i.e., (+)-cis-4-cumyloxy-2-cyclopenten-1-ol (I, R1 = β-OCMe2Ph, R2 = β-OH) and (-)-cis-1-acyloxy-4-cumyloxy-2-cyclopentene I (R1 = α-OCMe2Ph, R2 = α-acyloxy), which are useful as intermediates for biol. active compds. such as prostaglandins, and processes for preparing them. The invention also relates to the use of the optically active alc. and the analog thereof for the preparation of (-)-oxabicyclo[3.3.0]oct-6-en-3-one (II). Thus, (±)-cis-4-cumyloxy-2-cyclopenten-1-ol underwent enzymic resolution with vinyl acetate and Lipase PS immobilized on Celite at room temperature for 2 h to give 50% (+)-cis-4-cumyloxy-2-cyclopenten-1-ol and 43% (-)-cis-1-acetoxy-4-cumyloxy-2-cyclopentene. (+)-Cis-4-cumyloxy-2-cyclopenten-1-ol was treated with dimethylacetamide di-Me acetal followed by cyclization to give 87% (-)-oxabicyclo[3.3.0]oct-6-en-3-one.

ST enzymic resoln cumyloxycyclopentenol; oxabicyclooctenone prepn; cumyloxycyclopentenol prepn prostaglandin intermediate; cyclopentenal cumyloxy prepn prostaglandin intermediate

IT Resolution (separation)
(enzymic; optically active alcs. and processes for the preparation thereof via)

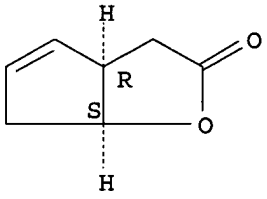
IT 258834-27-4P 258834-28-5P
RL: BPN (Biosynthetic preparation); IMF (Industrial manufacture); PUR (Purification or recovery); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(processes for the preparation of optically active alcs.)

IT 120520-91-4P 258834-29-6P 258834-30-9P 258834-31-0P 258834-33-2P
RL: BPN (Biosynthetic preparation); IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(processes for the preparation of optically active alcs.)

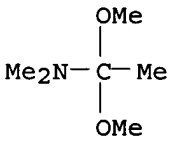
IT **43119-28-4P**
RL: BPN (Biosynthetic preparation); IMF (Industrial manufacture); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

(processes for the preparation of optically active alcs.)
IT **18871-66-4** 119487-80-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(processes for the preparation of optically active alcs.)
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; PATENT ABSTRACTS OF JAPAN 1988, V012(372), PC-533
(2) Kowa Co; GB 1561314 A 1980 HCAPLUS
(3) Nakashima, H; SYNLETT 1999, 11, P1754 HCAPLUS
(4) Nakashima, H; SYNTHESIS 2000, 6, P817 HCAPLUS
(5) Nissan Chem Ind Ltd; JP 63122647 A 1988 HCAPLUS
(6) Sugahara, T; SYNTHESIS 1996, P1101 HCAPLUS
(7) Takano, S; HETEROCYCLES 1981, V16(4), P605 HCAPLUS
IT **43119-28-4P**
RL: BPN (Biosynthetic preparation); IMF (Industrial manufacture); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(processes for the preparation of optically active alcs.)
RN 43119-28-4 HCAPLUS
CN 2H-Cyclopenta[b]furan-2-one, 3,3a,6,6a-tetrahydro-, (3aR,6aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT **18871-66-4**
RL: RCT (Reactant); RACT (Reactant or reagent)
(processes for the preparation of optically active alcs.)
RN 18871-66-4 HCAPLUS
CN Ethanamine, 1,1-dimethoxy-N,N-dimethyl- (9CI) (CA INDEX NAME)



L46 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:429530 HCAPLUS
DN 133:177121
ED Entered STN: 28 Jun 2000
TI Chiral preparation of polyoxygenated cyclopentanoids
AU Nakashima, Hiromi; Sato, Masayuki; Taniguchi, Takahiko; Ogasawara, Kunio
CS Pharmaceutical Institute, Tohoku University, Sendai, 980-8578, Japan
SO Synthesis (2000), (6), 817-823
CODEN: SYNTBF; ISSN: 0039-7881
PB Georg Thieme Verlag
DT Journal
LA English
CC 28-5 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 24
OS CASREACT 133:177121
AB A series of polyoxygenated cyclopentanoids, including 2,2-dimethyl-3a,6a-

dihydro-4H-cyclopenta[d][1,3]dioxol-4-one, was prepared in both enantiomeric forms from cyclopentadiene by employing lipase-mediated kinetic resolution as the key step. Thus, cyclopentadiene is first transformed into racemic cis-4-cumyloxy-2-cyclopenten-1-ol which is resolved under transesterification conditions in the presence of lipase PS. After transformation into the corresponding tert-butyldimethylsilyl (TBS) ethers, each of the enantiomers is cis-dihydroxylated diastereoselectively from the less hindered face which is transformed into the 2,3-O-isopropylidene-1,4-di-O-protected (trans-1,2:cis-2,3:trans-3,4)-1,2,3,4-cyclopentanetetraol. Selective removal of a 1,4-protecting group gives the corresponding 2,3,4-O-protected cyclopentanols which are further transformed into the 2,3,4-O-protected cyclopentanones on oxidation without suffering β-elimination. Exposure of the cyclopentanones to warm acetic acid allows β-elimination to give rise to the dehydration product 2,2,-dimethyl-3a,6a-dihydro-4H-cyclopenta[d][1,3]dioxol-4-one having the corresponding chirality without losing their original chiral integrity. Two of the target compds. thus prepared were (+)-(3aS,6aS)-3a,6a-dihydro-2,2-dimethyl-4H-cyclopenta-1,3-dioxol-4-one and (-)-(3aR,6aS)-3a,6a-dihydro-2,2-dimethyl-4H-cyclopenta-1,3-dioxol-4-one.

ST cyclopentadioxolone enantiomer stereoselective synthesis; lipase resoln methylphenylethoxy cyclopentenol prepn

IT 258834-27-4P, (-)-(1S,4R)-4-(1-Methyl-1-phenylethoxy)-2-cyclopenten-1-ol acetate 258834-28-5P, (+)-(1R,4S)-4-(1-Methyl-1-phenylethoxy)-2-cyclopenten-1-ol
RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation of dihydrodimethyl-4H-cyclopenta-1,3-dioxolone enantiomers)

IT **18871-66-4**, N,N-Dimethylacetamide dimethyl acetal 57702-56-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of dihydrodimethyl-4H-cyclopenta-1,3-dioxolone enantiomers)

IT **43119-28-4P**, (3aR,6aS)-3,3a,6,6a-Tetrahydro-2H-cyclopenta[b]furan-2-one 65457-77-4P, 4-(1-Methyl-1-phenylethoxy)-2-cyclopenten-1-one 119487-80-8P, (1R,4S)-rel-4-(1-Methyl-1-phenylethoxy)-2-cyclopenten-1-ol 120520-91-4P 174149-60-1P 258834-29-6P 258834-30-9P, (-)-(1S,4R)-4-(1-Methyl-1-phenylethoxy)-2-cyclopenten-1-ol 258834-31-0P 258834-33-2P 273381-20-7P 273381-21-8P 273381-22-9P 273381-23-0P, (+)-(3aS,6R,6aS)-Tetrahydro-2,2-dimethyl-6-(1-methyl-1-phenylethoxy)-4H-cyclopenta-1,3-dioxol-4-one 273381-26-3P 273750-68-8P 288269-02-3P 288269-03-4P 288269-04-5P 288269-05-6P 288269-06-7P 288269-07-8P, (-)-(3aR,6S,6aR)-Tetrahydro-2,2-dimethyl-6-(1-methyl-1-phenylethoxy)-4H-cyclopenta-1,3-dioxol-4-one
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of dihydrodimethyl-4H-cyclopenta-1,3-dioxolone enantiomers)

IT 104010-72-2P, (+)-(3aS,6aS)-3a,6a-Dihydro-2,2-dimethyl-4H-cyclopenta-1,3-dioxol-4-one 115509-13-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of dihydrodimethyl-4H-cyclopenta-1,3-dioxolone enantiomers)

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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(10) Haubenstock, H; J Org Chem 1970, V35, P3208 HCAPLUS
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(12) Johnson, C; J Am Chem Soc 1986, V108, P5655 HCAPLUS

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(14) Johnson, C; Tetrahedron 1996, V52, P3769
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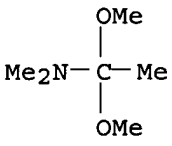
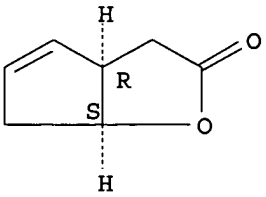
(16) Myers, A; Tetrahedron Lett 1986, V37, P3083
(17) Nakashima, H; Synlett 1999, P1754 HCAPLUS
(18) Ohrui, H; Agric Biol Chem 1987, V51, P625
(19) Schoffers, E; Acc Chem Res 1998, V31, P333
(20) Schroder, M; Chem Rev 1980, V80, P187
(21) Stork, G; J Am Chem Soc 1975, V97, P6260 HCAPLUS
(22) Sugahara, T; Synlett 1996, P319 HCAPLUS
(23) Sugahara, T; Synthesis 1996, P1101 HCAPLUS
(24) Takano, S; Chem Lett 1989, P359 HCAPLUS
(25) Takano, S; Chem Pharm Bull 1986, V34, P3445 HCAPLUS
(26) Takano, S; J Chem Soc, Chem Commun 1976, P189 HCAPLUS
(27) Wick, A; Helv Chim Acta 1964, V47, P2425 HCAPLUS
(28) Wong, C; Enzymes in Synthetic Organic Chemistry 1994

IT **18871-66-4**, N,N-Dimethylacetamide dimethyl acetal
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of dihydrodimethyl-4H-cyclopenta-1,3-dioxolone enantiomers)
RN 18871-66-4 HCAPLUS
CN Ethanamine, 1,1-dimethoxy-N,N-dimethyl- (9CI) (CA INDEX NAME)



IT **43119-28-4P**, (3aR,6aS)-3,3a,6,6a-Tetrahydro-2H-cyclopenta[b]furan-2-one
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of dihydrodimethyl-4H-cyclopenta-1,3-dioxolone enantiomers)
RN 43119-28-4 HCAPLUS
CN 2H-Cyclopenta[b]furan-2-one, 3,3a,6,6a-tetrahydro-, (3aR,6aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L46 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:726403 HCAPLUS
DN 132:166037
ED Entered STN: 15 Nov 1999
TI Lipase-mediated resolution of cis-4-cumyloxy-2-cyclopenten-1-ol and its utilization for enantioconvergent preparation of (-)-oxabicyclo[3.3.0]oct-6-en-3-one
AU Nakashima, Hiromi; Sato, Masayuki; Taniguchi, Takahiko; Ogasawara, Kunio
CS Pharmaceutical Institute, Tohoku Univ., Sendai, 980, Japan
SO Synlett (1999), (11), 1754-1756
CODEN: SYNLES; ISSN: 0936-5214
PB Georg Thieme Verlag

DT Journal
LA English
CC 26-3 (Biomolecules and Their Synthetic Analogs)
OS CASREACT 132:166037
AB A convenient preparation of both enantiomers of cis-4-cumyloxy-2-cyclopenten-1-ol from cyclopentadiene employing a lipase-mediated resolution was established. The efficient enantioconvergent transformation of both enantiomeric products afforded (-)-oxabicyclo[3.3.0]oct-6-en-3-one, an important building block of prostaglandin synthesis.
ST oxabicyclooctenone prostaglandin precursor stereoselective prepn; cumyloxycyclopentenol prepn enzymic resoln
IT Resolution (separation)
(enzymic; lipase-mediated resolution of cumyloxycyclopentenol)
IT Prostaglandins
RL: PNU (Preparation, unclassified); PREP (Preparation)
(stereoselective preparation of precursor oxabicyclo[3.3.0]octenone)
IT 258834-30-9P
RL: BPN (Biosynthetic preparation); PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(stereoselective preparation of oxabicyclo[3.3.0]octenone via lipase-mediated resolution of cumyloxycyclopentenol)
IT 120520-91-4P 258834-27-4P 258834-31-0P 258834-33-2P
RL: BPN (Biosynthetic preparation); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(stereoselective preparation of oxabicyclo[3.3.0]octenone via lipase-mediated resolution of cumyloxycyclopentenol)
IT 119487-80-8P
RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(stereoselective preparation of oxabicyclo[3.3.0]octenone via lipase-mediated resolution of cumyloxycyclopentenol)
IT 258834-28-5P
RL: PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(stereoselective preparation of oxabicyclo[3.3.0]octenone via lipase-mediated resolution of cumyloxycyclopentenol)
IT 80-15-9, Cumyl hydroperoxide 542-92-7, Cyclopentadiene, reactions **18871-66-4**, Dimethylacetamide dimethyl acetal
RL: RCT (Reactant); RACT (Reactant or reagent)
(stereoselective preparation of oxabicyclo[3.3.0]octenone via lipase-mediated resolution of cumyloxycyclopentenol)
IT 57702-56-4P 65457-77-4P 258834-26-3P 258834-29-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(stereoselective preparation of oxabicyclo[3.3.0]octenone via lipase-mediated resolution of cumyloxycyclopentenol)
IT **43119-28-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(stereoselective preparation of oxabicyclo[3.3.0]octenone via lipase-mediated resolution of cumyloxycyclopentenol)
RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(5) Myers, A; Tetrahedron Lett 1996, V37, P3083 HCAPLUS
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(8) Schoffers, E; Tetrahedron 1996, V52, P3769 HCAPLUS

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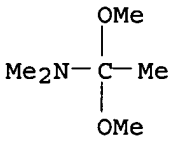
(10) Sugahara, T; Synlett 1996, P319 HCAPLUS
(11) Sugahara, T; Synthesis 1996, P1101 HCAPLUS
(12) Takano, S; Chem Pharm Bull 1986, V34, P3445 HCAPLUS
(13) Takano, S; Heterocycles 1981, V16, P605 HCAPLUS
(14) Takano, S; J Chem Soc, Chem Commun 1976, P189 HCAPLUS
(15) Wick, A; Helv Chim Acta 1964, V47, P2425 HCAPLUS

IT **18871-66-4**, Dimethylacetamide dimethyl acetal
RL: RCT (Reactant); RACT (Reactant or reagent)
(stereoselective preparation of oxabicyclo[3.3.0]octenone via lipase-mediated resolution of cumyloxycyclopentenol)

RN 18871-66-4 HCAPLUS

CN Ethanamine, 1,1-dimethoxy-N,N-dimethyl- (9CI) (CA INDEX NAME)

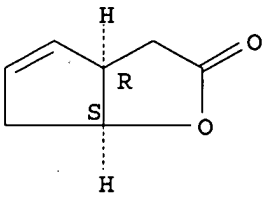


IT **43119-28-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(stereoselective preparation of oxabicyclo[3.3.0]octenone via lipase-mediated resolution of cumyloxycyclopentenol)

RN 43119-28-4 HCAPLUS

CN 2H-Cyclopenta[b]furan-2-one, 3,3a,6,6a-tetrahydro-, (3aR,6aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L46 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1996:674393 HCAPLUS
DN 126:59520
ED Entered STN: 15 Nov 1996
TI Kinetic Resolution of Racemic 2-Substituted 3-Cyclopenten-1-ols by Lipase-Catalyzed Transesterifications: A Rational Strategy To Improve Enantioselectivity
AU Ema, Tadashi; Maeno, Soichi; Takaya, Yusuke; Sakai, Takashi; Utaka, Masanori
CS Faculty of Engineering, Okayama University, Okayama, 700, Japan
SO Journal of Organic Chemistry (1996), 61(24), 8610-8616
CODEN: JOCEAH; ISSN: 0022-3263
PB American Chemical Society
DT Journal
LA English
CC 22-4 (Physical Organic Chemistry)
Section cross-reference(s): 7, 24, 26
OS CASREACT 126:59520
AB The effect of the acyl group of acylating agents on the enantioselectivity in the Pseudomonas cepacia lipase-catalyzed acylations of racemic alcs. has been studied. 2-[(N,N-Dimethylcarbamoyl)methyl]-3-cyclopenten-1-ol

(1) and 2-[2-(tert-butyldimethylsilyloxy)ethyl]-3-cyclopenten-1-ol (4) were resolved with a variety of enantioselectivities. In the case of alc. 1, the enantiomeric ratio (the E value) was increased by changing the acylating agent from vinyl acetate (E = 30) to vinyl butyrate (E = 156) and dropped substantially with longer acyl donors. With vinyl chloroacetate, the reaction rate was fast and the enantioselectivity was high (E = 89), whereas the resolution with vinyl trifluoroacetate resulted in a very poor enantioselectivity (E = 4). The bulky acylating agent, vinyl pivalate, gave a moderate enantioselectivity (E = 15). In the case of alc. 4, the enantioselectivities were excellent (E > 142) except with vinyl pivalate (E = 12). The acyl group transiently attached at the active site of the lipase acts as a stereochem. controller. The solvent effect is also described briefly. A clear correlation was observed between the E values and the log P values of the organic solvents; the smaller the log P value of the solvent, the higher the E value.

ST kinetic resoln cyclopentenol lipase catalyzed transesterification; acyl group effect lipase catalyzed transesterification

IT Functional groups
(acyl group as stereochem. controller; kinetic resolution of racemic 2-substituted 3-cyclopenten-1-ols by lipase-catalyzed transesterifications with vinyl esters)

IT Transesterification
(biol.; kinetic resolution of racemic 2-substituted 3-cyclopenten-1-ols by lipase-catalyzed transesterifications with vinyl esters)

IT Solvent effect
(enantioselectivity vs. log P; kinetic resolution of racemic 2-substituted 3-cyclopenten-1-ols by lipase-catalyzed transesterifications with vinyl esters)

IT Carboxylic acids, reactions
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(esters, vinyl; kinetic resolution of racemic 2-substituted 3-cyclopenten-1-ols by lipase-catalyzed transesterifications with vinyl esters)

IT Chemical chains
Steric hindrance
(kinetic resolution of racemic 2-substituted 3-cyclopenten-1-ols by lipase-catalyzed transesterifications with vinyl esters)

IT Resolution (separation)
(kinetic; kinetic resolution of racemic 2-substituted 3-cyclopenten-1-ols by lipase-catalyzed transesterifications with vinyl esters)

IT 9001-62-1
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(kinetic resolution of racemic 2-substituted 3-cyclopenten-1-ols by lipase-catalyzed transesterifications with vinyl esters)

IT 105-38-4, Vinyl propanoate 108-05-4, Vinyl acetate, reactions 123-20-6, Vinyl butanoate 433-28-3, Vinyl trifluoroacetate 769-78-8, Vinyl benzoate 818-44-0, Vinyl octanoate 2549-51-1, Vinyl chloroacetate 3050-69-9, Vinyl hexanoate 3377-92-2, Vinyl pivalate 4704-31-8, Vinyl decanoate 14861-06-4, Vinyl crotonate
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(kinetic resolution of racemic 2-substituted 3-cyclopenten-1-ols by lipase-catalyzed transesterifications with vinyl esters)

IT 75283-63-5P 149252-74-4P
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(kinetic resolution of racemic 2-substituted 3-cyclopenten-1-ols by lipase-catalyzed transesterifications with vinyl esters)

IT 43119-28-4P 49826-08-6P 149341-16-2P **176965-37-0P** **176965-38-1P** **176965-39-2P** **176965-40-5P**

176965-41-6P 176965-42-7P 176965-43-8P **176965-44-9P**
176965-45-0P **176965-46-1P** **177185-92-1P** 180187-46-6P
184682-84-6P 184682-85-7P 184682-88-0P 184682-91-5P 184851-05-6P
184851-06-7P
RL: PUR (Purification or recovery); SPN (Synthetic preparation); PREP (Preparation)
(kinetic resolution of racemic 2-substituted 3-cyclopenten-1-ols by lipase-catalyzed transesterifications with vinyl esters)

IT 26054-46-6 54483-55-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(kinetic resolution of racemic 2-substituted 3-cyclopenten-1-ols by lipase-catalyzed transesterifications with vinyl esters)

RE.CNT 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD

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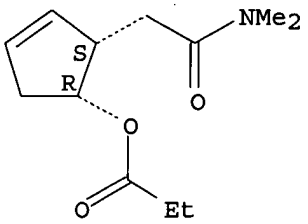
IT **176965-37-0P 176965-38-1P 176965-39-2P**
176965-40-5P 176965-41-6P 176965-44-9P
176965-46-1P 177185-92-1P
RL: PUR (Purification or recovery); SPN (Synthetic preparation); PREP (Preparation)
(kinetic resolution of racemic 2-substituted 3-cyclopenten-1-ols by lipase-catalyzed transesterifications with vinyl esters)

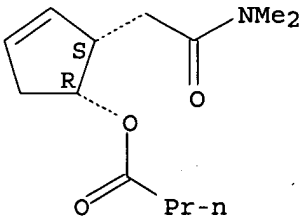
RN 176965-37-0 HCAPLUS
CN 2-Cyclopentene-1-acetamide, N,N-dimethyl-5-(1-oxopropoxy)-, (1S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



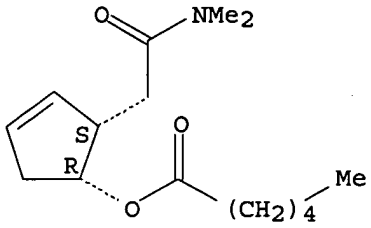
RN 176965-38-1 HCAPLUS
CN Butanoic acid, 2-[2-(dimethylamino)-2-oxoethyl]-3-cyclopenten-1-yl ester, (1R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



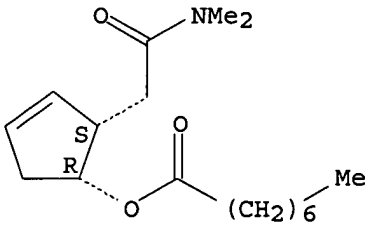
RN 176965-39-2 HCAPLUS
CN Hexanoic acid, 2-[2-(dimethylamino)-2-oxoethyl]-3-cyclopenten-1-yl ester, (1R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



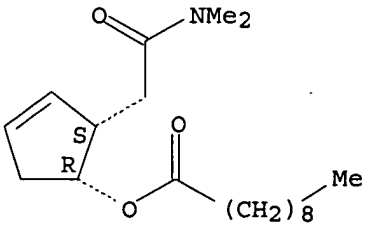
RN 176965-40-5 HCAPLUS
CN Octanoic acid, 2-[2-(dimethylamino)-2-oxoethyl]-3-cyclopenten-1-yl ester, (1R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



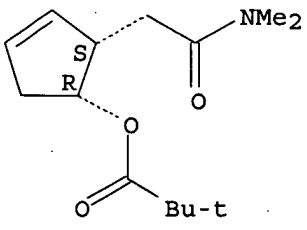
RN 176965-41-6 HCAPLUS
CN Decanoic acid, 2-[2-(dimethylamino)-2-oxoethyl]-3-cyclopenten-1-yl ester, (1R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



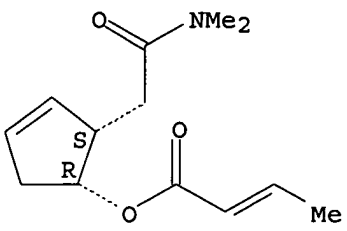
RN 176965-44-9 HCAPLUS
CN Propanoic acid, 2,2-dimethyl-, 2-[2-(dimethylamino)-2-oxoethyl]-3-cyclopenten-1-yl ester, (1R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



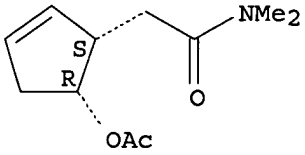
RN 176965-46-1 HCAPLUS
CN 2-Butenoic acid, 2-[2-(dimethylamino)-2-oxoethyl]-3-cyclopenten-1-yl ester, (1R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



RN 177185-92-1 HCAPLUS
CN 2-Cyclopentene-1-acetamide, 5-(acetyloxy)-N,N-dimethyl-, (1S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L46 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1996:215506 HCAPLUS
DN 125:10208
ED Entered STN: 16 Apr 1996
TI Significant effect of acyl groups on enantioselectivity in lipase-catalyzed transesterifications
AU Ema, Tadashi; Maeno, Soichi; Takaya, Yusuke; Sakai, Takashi; Utaka, Masanori
CS Dep. Appl. Chem., Okayama Univ., Okayama, 700, Japan
SO Tetrahedron: Asymmetry (1996), 7(3), 625-8
CODEN: TASYE3; ISSN: 0957-4166
PB Elsevier
DT Journal
LA English
CC 24-4 (Alicyclic Compounds)
OS CASREACT 125:10208
AB The effect of the acyl group of acylating agents on the enantioselectivity in the lipase-catalyzed transesterifications of racemic 2-[(N,N-dimethylcarbamoyl)methyl]-3-cyclopenten-1-ol in diisopropyl ether was found to be significant. The enantioselectivity was enhanced markedly by changing the acylating agent from vinyl acetate to vinyl butyrate, and dropped substantially with longer acyl donors. Other acyl donors were also examined
ST carbamoylmethylcyclopentenol enantioselective transesterification lipase catalyst
IT Stereochemistry
(effect of acyl groups on enantioselectivity in lipase-catalyzed transesterifications)
IT Transesterification
(enzymic, effect of acyl groups on enantioselectivity in lipase-catalyzed transesterifications)
IT **176965-37-0P 176965-38-1P 176965-39-2P**
176965-40-5P 176965-41-6P 176965-42-7P 176965-43-8P
176965-44-9P 176965-45-0P **176965-46-1P**
177185-92-1P

RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(effect of acyl groups on enantioselectivity in lipase-catalyzed transesterifications)

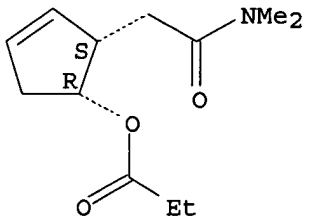
IT 138232-58-3P
RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(effect of acyl groups on enantioselectivity in lipase-catalyzed transesterifications)

IT 105-38-4, Vinyl propanoate 108-05-4, Vinyl acetate, reactions 123-20-6, Vinyl butyrate 433-28-3, Vinyl trifluoroacetate 769-78-8, Vinyl benzoate 818-44-0 2549-51-1, Vinyl chloroacetate 3050-69-9 3377-92-2 4704-31-8 14861-06-4 149341-16-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(effect of acyl groups on enantioselectivity in lipase-catalyzed transesterifications)

IT **176965-37-0P 176965-38-1P 176965-39-2P 176965-40-5P 176965-41-6P 176965-44-9P 176965-46-1P 177185-92-1P**
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(effect of acyl groups on enantioselectivity in lipase-catalyzed transesterifications)

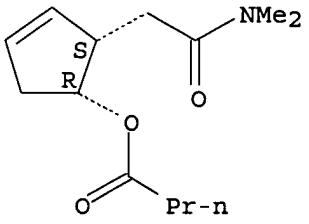
RN 176965-37-0 HCAPLUS
CN 2-Cyclopentene-1-acetamide, N,N-dimethyl-5-(1-oxopropoxy)-, (1S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



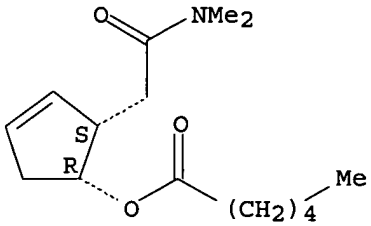
RN 176965-38-1 HCAPLUS
CN Butanoic acid, 2-[2-(dimethylamino)-2-oxoethyl]-3-cyclopenten-1-yl ester, (1R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



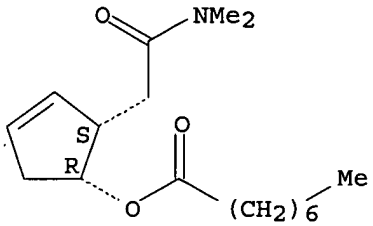
RN 176965-39-2 HCAPLUS
CN Hexanoic acid, 2-[2-(dimethylamino)-2-oxoethyl]-3-cyclopenten-1-yl ester, (1R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



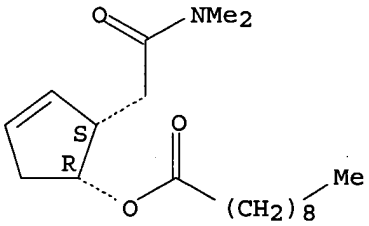
RN 176965-40-5 HCAPLUS
CN Octanoic acid, 2-[2-(dimethylamino)-2-oxoethyl]-3-cyclopenten-1-yl ester, (1R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



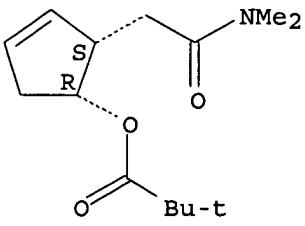
RN 176965-41-6 HCAPLUS
CN Decanoic acid, 2-[2-(dimethylamino)-2-oxoethyl]-3-cyclopenten-1-yl ester, (1R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



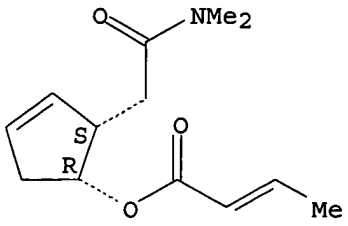
RN 176965-44-9 HCAPLUS
CN Propanoic acid, 2,2-dimethyl-, 2-[2-(dimethylamino)-2-oxoethyl]-3-cyclopenten-1-yl ester, (1R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



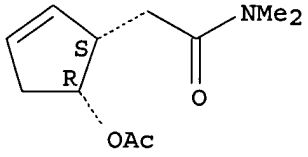
RN 176965-46-1 HCAPLUS
CN 2-Butenoic acid, 2-[2-(dimethylamino)-2-oxoethyl]-3-cyclopenten-1-yl ester, (1R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



RN 177185-92-1 HCAPLUS
CN 2-Cyclopentene-1-acetamide, 5-(acetyloxy)-N,N-dimethyl-, (1S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L46 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1993:517024 HCAPLUS
DN 119:117024
ED Entered STN: 18 Sep 1993
TI Preparation of optically active cyclopentenols as intermediates for prostaglandins.
IN Sakai, Takashi; Iida, Yasuhiro; Kikuyama, Shigeki; Tsuboi, Sadao; Uko, Masanori
PA Sumitomo Chemical Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07C235-30
ICS C07B057-00; C07D307-93; C12P041-00
CC 26-3 (Biomolecules and Their Synthetic Analogs)
Section cross-reference(s): 9
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05086002	A2	19930406	JP 1991-234653	19910913
	JP 3024299	B2	20000321		
PRAI	JP 1991-234653		19910913		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 05086002	ICM	C07C235-30
	ICS	C07B057-00; C07D307-93; C12P041-00

OS CASREACT 119:117024; MARPAT 119:117024
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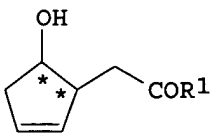
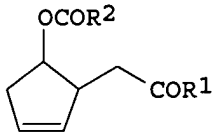
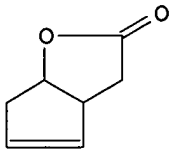


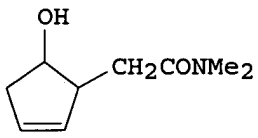
I



II



III



IV

AB The title compds. [I; R1 = (un)substituted alkyl, (un)substituted amino; asterisks signifies stereogenic carbon] are prepared via stereoselective hydrolysis of the esters II [R2 = alkyl] by an esterase. Thus, cis-dihydro[3.2.0]hept-2-en-6-one was oxidized with H2O2 to give the lactone III, which was amidated with dimethylamine, the resulting racemic amide IV was O-acetylated with AcCl, the resulting II [R1 = NMe2, R2 = Me] (V) was hydrolyzed with lipase, and the resulting (+)- and (-)-I (R1 = NMe2] were sep. purified.

ST optically active cyclopentenol prepn; prostaglandins intermediate prepn

IT Prostaglandins
RL: RCT (Reactant); RACT (Reactant or reagent)
(intermediates for, hydroxycyclopenteneacetic acid derivs. as)

IT Resolution
(of cyclopentenols by enzymic stereoselective hydrolysis)

IT Hydrolysis
(stereoselective, of hydroxycyclopenteneacetic acid derivs.)

IT 124-40-3, Dimethylamine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(amidation by, of hydroxycyclopenteneacetic acid lactone)

IT 13173-09-6, Bicyclo[3.2.0]hept-2-en-6-one
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation of)

IT 26054-46-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and amidation of, with dimethylamine)

IT **149252-75-5P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and enzymic resolution of)

IT 149252-74-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and esterification of, with acetyl chloride)

IT 149341-16-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)

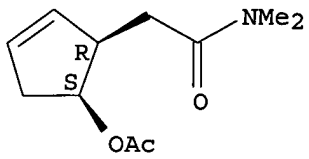
IT 54483-22-6P 138232-58-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 9001-62-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(stereoselective hydrolysis by, of hydroxycyclopenteneacetamide derivative)

IT **149252-75-5P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and enzymic resolution of)
RN 149252-75-5 HCAPLUS
CN 2-Cyclopentene-1-acetamide, 5-(acetyloxy)-N,N-dimethyl-, cis- (9CI) (CA INDEX NAME)

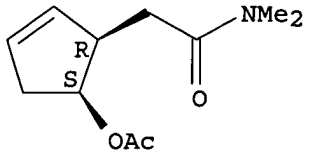
Relative stereochemistry.



L46 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1992:37406 HCAPLUS
DN 116:37406
ED Entered STN: 08 Feb 1992
TI Lipase-catalyzed resolution of 2-substituted 3-cyclpenten-1-ol derivatives
AU Sakai, Takashi; Iida, Yasuhiro; Kikuyama, Shigeki; Tsuboi, Sadao; Utaka, Masanori
CS Fac. Eng., Okayama Univ., Okayama, 700, Japan
SO Chemistry Letters (1991), (9), 1651-2
CODEN: CMLTAG; ISSN: 0366-7022
DT Journal
LA English
CC 9-14 (Biochemical Methods)
Section cross-reference(s): 26
OS CASREACT 116:37406
AB 2-Oxabicyclo[3.3.0]oct-6-ene-3-one, the key intermediate in the prostaglandin synthesis, was subjected to the optical resolution by use of lipase after conversion to 2-[2-(tert-butyldimethylsilyloxy)ethyl]-3-cyclopenten-1-yl acetate and 2-[2-(N,N-dimethylcarbamoyl)methyl]-3-cyclopenten-1-yl acetate.
ST cyclopentenol deriv resoln lipase
IT 9001-62-1
RL: ANST (Analytical study)
(in resolution of 2-substituted 3-cyclopentene-1-ol derivs.)
IT 138232-58-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclization of)
IT 138232-55-0P 138232-56-1P
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)
IT 75283-63-5P 138110-73-3P
RL: PREP (Preparation)
(preparation and resolution using lipase)
IT 49826-08-6P 54483-22-6P 54483-54-4P **138232-57-2P**
RL: PREP (Preparation)
(preparation of)
IT 26054-46-6
RL: PROC (Process)
(reduction and derivatization of)
IT 149252-74-4 **149252-75-5**
RL: PROC (Process)
(resolution of, by lipase)
IT **138232-57-2P**
RL: PREP (Preparation)
(preparation of)
RN 138232-57-2 HCAPLUS

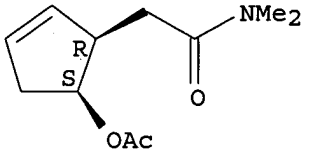
CN 2-Cyclopentene-1-acetamide, 5-(acetyloxy)-N,N-dimethyl-, (1R,5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

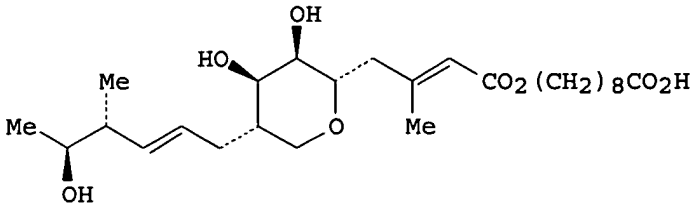


IT **149252-75-5**
RL: PROC (Process)
(resolution of, by lipase)
RN 149252-75-5 HCAPLUS
CN 2-Cyclopentene-1-acetamide, 5-(acetyloxy)-N,N-dimethyl-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L46 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1988:510772 HCAPLUS
DN 109:110772
ED Entered STN: 01 Oct 1988
TI Total synthesis of pseudomonic acid C
AU Barrish, Joel C.; Lee, Hsi Lin; Mitt, Toomas; Pizzolato, Giacomo; Baggiolini, Enrico G.; Uskokovic, Milan R.
CS Chem. Res. Dep., Hoffmann-La Roche, Inc., Nutley, NJ, 07110, USA
SO Journal of Organic Chemistry (1988), 53(18), 4282-95
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA English
CC 33-3 (Carbohydrates)
OS CASREACT 109:110772
GI



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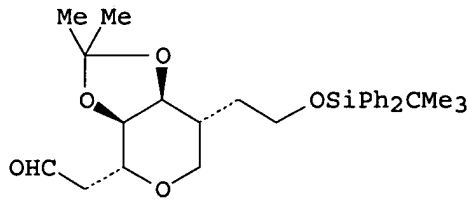


II

AB Total synthesis of pseudomonic acid C (I) was carried out from simple starting materials via a large number of steps. Key intermediate II was prepared by 2 distinct routes. A new approach for the introduction of side-chain stereochem. was developed by using the chirality of the central pyran fragment.

ST pseudomonic acid C synthesis

IT 108306-38-3, 3,5-Hexadienoyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(acylation by, of phenethylamine)

IT 92516-83-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with (dioxolopyranyl)propanone derivative, in total synthesis of pseudomonic acid C)

IT 79-14-1, Glycolic acid, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of, with benzyl bromide)

IT 49826-00-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(lactonizations of, in total synthesis of pseudomonic acid C)

IT 107148-30-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and (benzyloxy)acetylation of)

IT 115118-80-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and acetonation of)

IT 115118-85-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and coupling of, with dioxoparacetaldehyde derivative, in total synthesis of pseudomonic acid C)

IT 115118-81-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclization of, with ethylene glycol)

IT 115118-77-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclization of, with formaldehyde)

IT 115183-64-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and dehydroiodination of)

IT 115118-74-6P 115118-75-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and dehydroxylation of)
IT 89726-76-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and deprotection of)
IT 115118-71-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and epoxidn. of, in synthesis of pseudomonic acid C)
IT 115140-93-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrogenation of)
IT 115118-86-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrogenolysis of)
IT 115140-92-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydroxylation of)
IT 115118-83-7P 115118-88-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and iodination of)
IT 115118-78-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and iodolactonization of)
IT 115118-72-4P 115118-90-6P 115118-92-8P 115183-68-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and oxidation of)
IT 105459-05-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with (hydroxypropenyl)dioxolopyranethanol derivative)
IT 115118-84-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with benzenesulfinic acid)
IT 107148-23-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with dimethylacetamide di-Me acetal)
IT 107148-31-2P 115118-87-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with lithium diisopropylamide and trimethylsilyl chloride)
IT 115118-91-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with methyllithium)
IT 107148-25-4P 107148-29-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reactions of, in total synthesis of pseudomonic acid C)
IT 85576-58-5P 107148-20-9P 107148-24-3P 107148-27-6P 115118-73-5P

115118-89-3P 115183-65-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)

IT 115118-76-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and removal of tert-butyldimethylsilyl group from)

IT 107148-21-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and ring enlargement of, pyranone derivative from)

IT 72042-22-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and saponification of)

IT 107148-22-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and silylation of, in total synthesis of pseudomonic acid C)

IT 85576-59-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and tosylation of)

IT 30379-58-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and tert-butyldimethylsilylation of)

IT 115183-63-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and tert-butyldiphenylsilylation of)

IT 107148-32-3P 107241-79-2P 115118-79-1P 115118-82-6P 115183-66-9P
115183-67-0P 115183-69-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 89726-74-9P 107148-26-5P 107148-28-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, intermediate in total synthesis of pseudomonic acid C)

IT **54483-22-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, reduction, and silylation of, in total synthesis of pseudomonic acid C)

IT 74-99-7, Methylacetylene
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with butyllithium and paracetamide derivative, in total synthesis of pseudomonic acid C)

IT **18871-66-4**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dihydropyranol derivative, in total synthesis of pseudomonic acid C)

IT 71980-98-8P, Pseudomonic acid C
RL: SPN (Synthetic preparation); PREP (Preparation)
(total synthesis of)

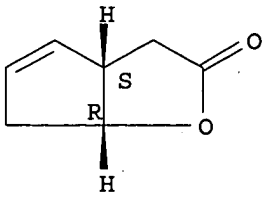
IT 3886-69-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(N-acylation of, with hexadienoyl chloride)

IT 78088-28-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(tert-butyldimethyl silylation of)

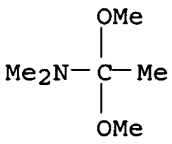
IT **54483-22-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation, reduction, and silylation of, in total synthesis of pseudomonic
acid C)
RN 54483-22-6 HCAPLUS
CN 2H-Cyclopenta[b]furan-2-one, 3,3a,6,6a-tetrahydro-, (3aS,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT **18871-66-4**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dihydropyranol derivative, in total synthesis of pseudomonic acid C)
RN 18871-66-4 HCAPLUS
CN Ethanamine, 1,1-dimethoxy-N,N-dimethyl- (9CI) (CA INDEX NAME)



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